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Mental models and activity systems for developing psychologists competences to teach psychology: experiences and cognitions of tutors and students at university apprendiceship.

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MENTAL MODELS AND ACTIVITY SYSTEMS FOR DEVELOPING PSYCHOLOGISTS COMPETENCES TO TEACH PSYCHOLOGY: EXPERIENCES AND COGNITIONS OF TUTORS AND STUDENTS AT UNIVERSITY APPRENTICESHIP

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ABSTRACT

The work examines "mental models to analyse and solve problems situated in school settings" that were built in "communities of practice" of University training for teaching future psychologists to teach Psychology . Descriptive ethnography includes quantitative and qualitative analysis. At the beginning/at the end of Undergraduate Apprenticeship, one questionnaire about educational problems and another about conceptions on learning were administered to 22 tutors and 85 students. Results show differences between tutors and students in explicit knowledge, scientific hypothesis and professional involvement in "activity systems". It is difficult for students to raise awareness about deep differences between professional psychologists interventions and psychology teachers activities. Developing competences to teach Psychology is challenging at University.

Key-words. Mental models, competences, apprenticeship, teaching

AIMS

- To analyse mental models of intervention on different problems situated in contexts of teaching practice in Students and Tutors of Undergraduate Teaching Apprenticeship at Buenos Aires University.
- To identify heterogeneity and diversity of experiences and meanings, in the process of developing professional competences in "psychology teachers modelling".

INTRODUCTION

This work has been developed in the frame of UBACYT P061 Research Project *"Building mental models for problems of professional intervention in Students of Psychology. Participation in communities of practice and situated learning"* from 2004 to 2007. In *XXXI Interamerican Congress of Psychology* , on July 2007 in Mexico City, the aims of the research were situated in a

professional-academic and educational context with a particular history: an argentine University that is committed with the modeling of Psychology teaching professionals for Secondary and Higher Educational Institutions at the beginning of 21st century. The study is supported by works of research developed by a team led by Erausquin C. since 2003 about "different figures of situated Psychologists", that were built as natural categories with the narrations of Students of Psychology, throughout prototypes and examples of educational experiences in different Areas of Professional Practice. Teaching Psychology Course has been created at Buenos Aires University in 1995 and has been settled in Faculty of Psychology since 2004, for the modeling of Advanced Students of Psychology and Graduate Psychologists. Through different types of data, the relationship between teachers and pupils, teachers and contents and students and contents are de-constructed and re-viewed focusing on observations, interviews and practice of teaching that practitioners make in the context of Teaching Training in Secondary and Higher School. Teaching Psychology involves an object of study particularly slippery to define and not precisely delimited: a weft of soul, conscious, behaviour, unconscious, cognitive subject, social subject, in a discoursive network with tensions and breaks. Compagnucci and Denegri say, at La Plata University (2002:19): *"Teaching has to face the complexity through a strong epistemic and didactic control of different mediations that crosses through formal prescriptive curriculum and real and actually taught curriculum. Students and Teachers knowledge and beliefs systems show the worth and the role of scientific discipline knowledge and the context of practice in the definition, meaning and sense of educational experience"*.

CONCEPTUAL FRAME

* **"Units of analysis"** and **"zone of proximal development"** - Lev Vigotsky

* **"Zone of social construction/appropriation** of knowledge, meanings, senses and motives, building social and personal identities"- Newman, Griffin, Cole, Lab of Human cognition

* **"Apprenticeship"** - institutional-cultural focus -, **"Guided participation"** - interpersonal focus - and **"Participative appropriation"** - personal focus - in **"Communities of practice"** and **"Community of learners»** - Barbara Rogoff , Jean Lave and Etienne Wenger.

* **"Activity Theory", Third generation**, Cognitive change through **Exchange, Historicity and Multi-voicedness, Tensions, Contradictions and Conflicts** in **"Expansive learning" at Work** . Internalization and Externalization. - Y. Engestrom.

* **"Mediated action and mediating tools or cultural artifacts**", Irreductible tension between agent and tools in the stage - James Wertsch.

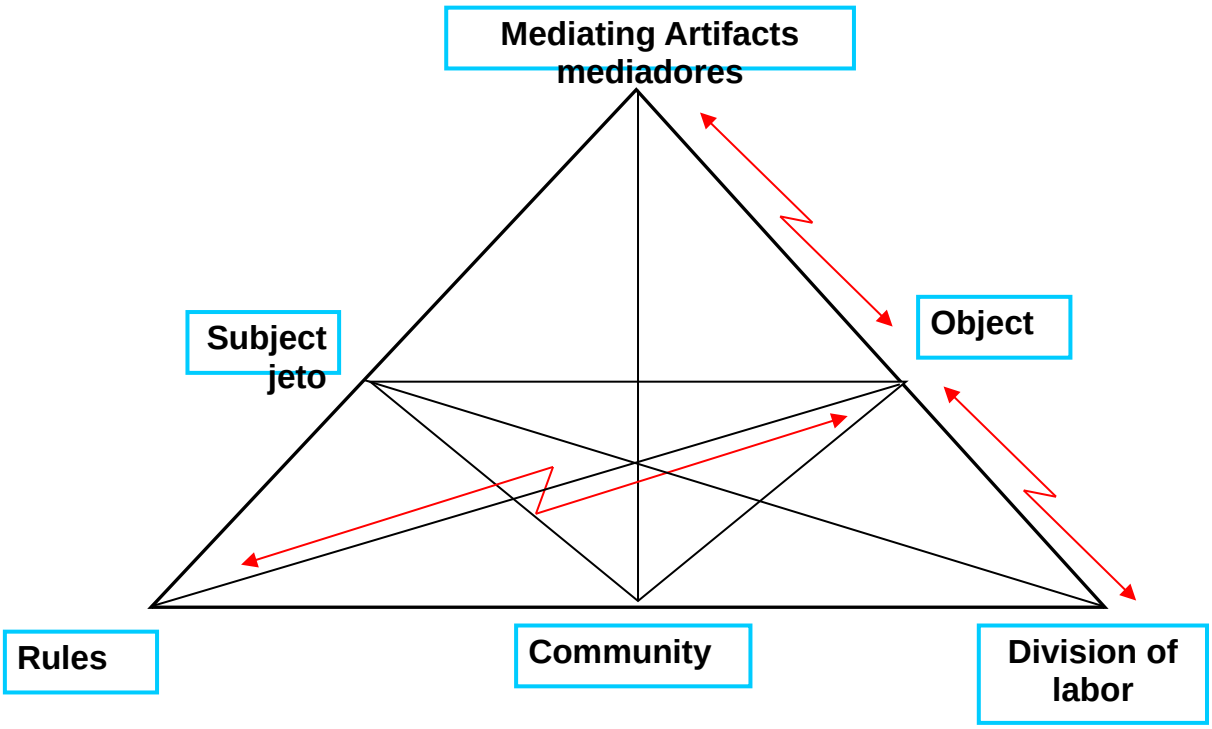
* **"Mental models" and Cognitive Change in Educational Contexts and socio-cultural settings**. Shared mental models and negotiation of meanings. **From Implicit to explicit, from simple to complex and from realism to perspectivism** - M.J.Rodrigo. **Episodic constructivism**.

* **"Construction of competences in Education at School"** - Philippe Perrenoud.

* **"Reflection into, from and after the practice, reflection of reflection from the practice"** - Donald Schon.

The metaphor of **"scaffolding**" of Bruner, Woods et al. is used to explain the device that is built in the Professional Practice Apprenticeship. We have used it for understanding the process that is developed between tutors and students in the **appropriation** by students of the competences, skills, attitudes that identify the professional role in each field., in the paradoxical sense of "strategic fiction", that assigned Newman, Griffin and Cole to **"cooperative task"**. People may begin solving a problem together, doing a diagnosis, playing a role in the interview, **as if they were** professionals– the novices – . The performance precedes the competence: the action anticipates the comprehension. We think that the cognitive change happens in the Vygotskian **"zone of proximal development**", in the sense of a zone of interactive construction of knowledge, with different alternatives of departure, open representations between individuals, a teacher-expert-tutor guiding the development of the competence in an asymmetric but reciprocal appropriation of knowledge and responsibility and power to decide the actions. The Critical Perspective in Psycology and Pedagogy of Socio-Historic-Cultural Theory develop a situated and dialectical point of view about Cognition. Frame which is based in Lev Vygotsky thought. In line to James Wertsch "action mediated by artifacts or mediation tools", mainly Yrjo Engestrom concepts of **"system of activity"** have inspirated our construction of a "unit of analysis" that may reflect the complexity and interdependence of dimensions into the subject of Psychologists Training. Yrjo Engestrom (2001) has studied the relation between microcontext, macrocontext and human actors in diverse settings of **"Work in Change"** and emphasized the role of **tensions and contradictions:** work changes by changing the context and changing the actors mind, through a process of "**internalization and externalization"**, plus the confrontation of different models and activity systems, negotiation and translation of meanings, purposes, attitudes. The process should respect the differences by including them in new "task unities" without eliminating the diversity. The focus tries to overcome modernity "split conception" between body and mind, emotion and knowledge, society and individual (Castorina and Baquero, 2005) (8). Feelings, attitudes, values and emotions may introduce discontinuities – meaningful ones – in the "conceptual

change" of students of Psychology becoming psychologists. We focus in "**cognitive change**", as it has been studied by María José Rodrigo (1994, 1997, 1999, 2001) (9), in educational settings. To distinguish from a more stable representation such as "schemas", Rodrigo used in 90s the concept of "mental model", created by Johnson Laird in 80s. ***Mental models*** are ***"psychological constructions, dynamic and temporal representations, based on a specific part of our beliefs and knowledge about the world, that are activated by the content of the task or the situation, and depend on our personal intentions related to the event we have to cope with"*** (Rodrigo:1997). To formulate, analyze and solve a problem that demands professional intervention of psychologists, students of Psychology build a discursive configuration that supposes a mental model. In former paper presented to *XXVIII International Congress of Psychology* in Beijing, China, 2004, "The apprenticeship in "communities of practice": a cognitive contribution", we pointed that our **"unit of analysis"** – "the very small unit in which you can divide a problem of study without loosing its essential nature" (Vygotsy, 1998) – was *"the mental models that the students of psychology build for the reflective analysis of problems situated in contexts, which need a professional intervention strategy from the psychologists in different fields of activity"* (Erausquin, Basualdo et al. 2004) (11). Pyshologists in process of training develop a "participative appropriation" of tools (Rogoff 1997) (12), building general and specific "competences" for the professional activities in different contexts in "communities of practice" (Lave and Wenger, 1991).(13) A **competence** is something you know how to do, a skill, but more than that, it is a **strategic ability**, necessary to face complex situations. It´s not a procedure, a rule, a recipe, although it may include them if necessary. ***"A competence is a capacity of effective action toward a family of situations, that people can construct because they have the necessary knowledge and the ability to mobilize that resource in an appropriate way and in an opportune time, to identify and solve the problems"*** (Ph. Perrenoud, 2004). It is remarkable a **"contextualist shift**" in the conception of **"learning"** (Pintrich, 1994, Baquero, 2001), no more considered only a mental and individual event, but a complex activity, involving mind an body, emotion and cognition, in the core of interpersonal exchange. Learning is not purely cognoscitive, is a change in some sense impredictable, situated into the participation and understanding of social situations, an actually heterogenous process of production and negotiation of meanings and senses. Nowadays, it is urgent to gather resources for developing competences to make professional activity of psychologists successful and efficient, throughout activity systems of academic settings, built for improving the quality of education and enhancing psychologists activity. Practicum is a suitable space for "developing competences", because is situated between work and education, and students are embedded in tasks units outside University walls , working with professionals in "real" contexts and through "real" activities of social relevance.



"Mediational Expanded Basic Triangle", (ENGESTROM, 1991), an "artifact" for drawing units of análisis, in socio-cultural theory, for understanding the process of school learning as well as psychologists interventions in educational contexts.

METHODOLOGICAL STRATEGIES

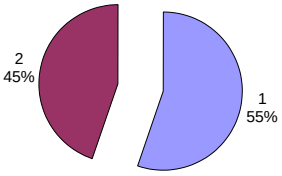
Descriptive and exploratory study with qualitative and quantitative data analysis. The work is based on a contextualized re-meaning of **Conceptual Change Theories** (Rodrigo 1994, 1997, 1999, Rodrigo and Pozo, 2001), applied into **educational contexts** from socio-cultural perspective and linked with "systems of appropriation" of competences for teaching (Perrenoud, 2003). Writing, specially **narrative genre writing** (Schlemenson, 2004) has the power to reconstruct and transform the objective reality with communication and personal appropriation, as well as it transforms the memory in thinking, wishes and goals. **Narrative writing** introduces beliefs and also deconstructs our knowledge as fix and institued, with a perspective that is an outcome of personal experience as well as crossed by culture and history. ***Narration highlights narrator subjectivity as much as situation in which he/she is embedded***. Writing means projecting, turning objective the subject, building a text that cam be read by others and that allows them to participate in a collaborative reflection, with multiple perspectives, through interaction, negotiation and exchange of senses and meanings.

According to former diagnostic (Erausquin, Basualdo, 2004) a ***unit of analysis was defined*** and categories were built for understanding information offered by students and tutors narrations. Dynamic and complex figures were drawn, joint with the conception of ***mental models about situation-problems for analyzing and solving***. In current study the **Unit of analysis** is composed by four **Dimensions**: a) Situation-problem in the context of Psychology teacher Activity, b) Intervention/Action of Psychology teacher, c) Tools used by the agent, Psychology teacher, in the Professional Role Activity, d) Outcome of Activity and Attribution of Causes or Reasons. In each one of the dimensions, different **Axes** are displayed, conforming lines of development and tensions identified in process of "getting professionalism" as psychologist in socio-cultural and historic context. In each one of the axes, we distinguish five **Indicators** that point out qualitative differences of the mental models, ordered in a line of enhancement and improvement in the process of getting professionalism. It is not supposed a "representational hierarchy", neither genetic nor of power or efficiency, in a fix form. The tools for data collection and the categories of analysis that were used with "Psychologists in modeling", "Recently Graduate Psychologists", "School Psychologists and School Teachers", "Tutors and Mentors of Professional Practice in Undergraduate Apprenticeship of Psychologists Modeling", since 2003 until 2006, and in research about other Tutors, Mentors, Coach Teachers that are modeling the Professional Practice of different Courses and Careers - Engineering, Law, Enterprise Administration and Economy -, have been currently adapted and re-contextualized for the study about "Psychology Teachers modeled and in modeling" in Teaching Apprenticeship of Psychology Teaching Course at Buenos Aires University. Data were collected through a writing consultation with a set of open questions, named ***Questionnaire about Situations-Problems of Intervention in Psychologist Teacher Activity,*** administered at the beginning and at the end of the educational experience in a subject named "Specific Didactic and Psychology Teaching Practice" on April and December of 2007 to 85 Students and 24 Tutors - Mentors, Assistants and Coach Teachers - in Psychology Teaching Course at Buenos Aires University.

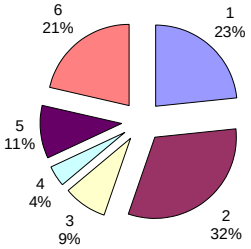
SAMPLES

Teaching Psychology Students Sample comprehends 85 subjects that developed the course "Special Didactic in Psychology Teaching" and were interviewed at first day of classes in april of 2007. *Teaching experience*: 55% had teaching experience and 45% didn´t have it (45%). *Sex:* 87% female and 13% male. *Age*: 47% from 25 to 30, 24% from 31 to 35, 26% from 36 to 50 and 3% elder than 50 years old. *Levels of school teaching*: Secondary (23%), Higher University (32%), Higher Tertiary (9%), Secondary and Higher University (11%),

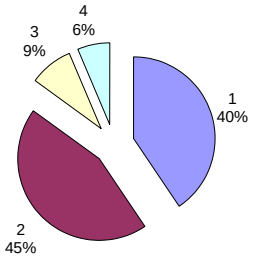
Other School Levels (21%). *Range in teaching experience*: up to 2 years (40%), from 2 to 10 years (45%), from 11 to 20 years (9%), from 21 to 30 years (6%). *Settings in teaching experience*: private (34%), public (47%), both of them (19%)



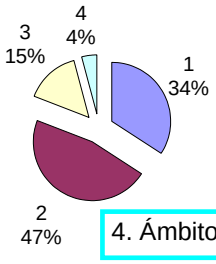
1. Experiencia Docente



2. Niveles de Enseñanza



3. Años de Experiencia



4. Ámbitos

Teaching Psychology Apprenticeship Tutors Sample comprehends 24 Teachers of "Specific Didactic and Psychology Teaching Practices". *Interviewed*: 1 Master Coaching Teacher, 1 Coach of Practice Work, 13 Practice Work Tutors and 9 Assistants of Tutors. *Background University Careers*: 10 Psychologists, 13 Psychologists and Psychology Teachers and 1 Educational Science Professional. *Sex*: 13% Male, 87% Female. *Age*: 25% from 25 to 30 , 12% from 31 to 35 and 63% from 36 to 50 years. *Levels of school teaching*: Secondary (14%), Higher University (43%), Higher Tertiary (14 %), Secondary and Higher University (19%), Higher University and Tertiary(21%). *Range in teaching experience*: up to 2 years (24%), from 2 to 10 years (43%), from 11 to 20 years (24%). *Settings in teaching experience*: private and public (20%), public (80%)

DATA ANALYSIS

STUDENTS WITH TEACHING EXPERIENCE
DIMENSION: SITUATION-PROBLEM

Axe 6: From realism to perspectivism

PRE

	Frequency	Percentage	Porcentaje acumulado
1	2	7,1	7,1
2	4	14,3	14,3
3	8	28,6	28,6
4	14	50,0	50,0
Total	28	100,0	100,0

TUTORS

POST

	Frequency	Percentage	Porcentaje acumulado
1	1	3,6	3,6
2	6	21,4	21,4
3	5	17,9	17,9
4	15	53,6	53,6
5	1	3,6	3,6
Total	28	100,0	100,0

	Frequency	Percentage	Porcentaje acumulado
3	9	40,9	40,9
4	13	59,1	100,0
Total	22	100,0	

STUDENTS WITHOUT TEACHING EXPERIENCE

PRE

	Frequency	Percentage	Porcentaje acumulado
1	1	4,0	4,0
2	8	32,0	32,0
3	7	28,0	28,0
4	8	32,0	32,0
5	1	4,0	4,0
Total	25	100,0	100,0

POST

	Frequency	Percentage	Porcentaje acumulado
1	1	4,0	4,0
2	4	16,0	16,0
3	7	28,0	28,0
4	12	48,0	48,0
5	1	4,0	4,0
Total	25	100,0	100,0

STRENGTHS IN STUDENTS MENTAL MODELS SHIFTS BETWEEN PRE-TEST AND POST-TEST:

TUTORS AND STUDENTS WITH AND WITHOUT TEACHING EXPERIENCE - 1st DIMENSION: SITUATION-PROBLEM - Axe 6: From realism to perspectivism in analysis of the problem. Indicator (4) with maximum frequency in **Tutors** (59,1%) and also in **Students with and without former teaching experience.** Percentage of **Indicator(4)** ***perspectivism in the competence of dis-centering oneself from a unique perspective of the problem*** increases from Pre-Test to Post-Test in Students with former teaching experience (Pre-Test 50% a 53,6% Post-Test) and only in Post-Test appears **Indicator (5)** ***comparative analysis of different perspectives for developing and solving the problem*** (3,6%).
Percentage of **Indicator (4)** increases more strongly in Students without former teaching experience (Pre-Test 32%, maximum frequency shared with **Indicator 2,** ***only one version of reality, as if it were the unique possible, like in common sense***, and in Post-test, Indicator 4, (48%), maximum frequency, and Indicator 2, (16%). Example:

Pre-Test: "In a Teaching Journal Meeting, teachers raised the teen-agers problems, the violence and addictions and their expressions in school settings. My participation as Psychology teacher meant a contribution related with the subjects of the discipline, because they could understand explicitly the function and the extent of teachers role in Psychology. My opinion and my way of working with adolescents groups became part of an institucional project".

Post-Test: "In 2nd course, students seem apathic, without interest and without will. They have had communication problems with former teacher and although School Director support them, they say that nobody understand them. Institution seem reluctant to an open communication and free interaction. I decided to intervene, to take part, trying to talk with students, considering them active subjects with their own opinions, listening to their speech. I carried the problem to Department Meeting and found that other teachers suffered a problem of absence or deficit of communication at school. Talking with Director, we began to change our encapsulated positions and decided to promote a participative focus, taking part and being part of the institution we want, "giving" to students a space for opinion and reflection"

HETEROGENEOUS SHIFTS

STUDENTS WITH TEACHING EXPERIENCE
DIMENSION: INTERVENTION OF PSYCHOLOGY TEACHER
Axe 4: Aims and purposes of Teacher Intervention

PRE

	Frequency	Percentage	Porcentaje acumulado
3	15	53,6	53,6
4	12	42,9	42,9
5	1	3,6	3,6
Total	28	100,0	100,0

POST

	Frequency	Percentage	Porcentaje acumulado
1	3	10,7	10,7
2	2	7,1	7,1
3	11	39,3	39,3
4	9	32,1	32,1
5	3	10,7	10,7
Total	28	100,0	100,0

TUTORS

	Frequency	Percentage	Porcentaje acumulado
1	1	4,5	4,5
3	8	36,4	40,9

4	13	59,1	100,0
Total	22	100,0	

STUDENTS WITHOUT TEACHING EXPERIENCE

PRE

	Frequency	Percentage	Porcentaje acumulado
1	2	8,0	8,0
3	14	56,0	56,0
4	9	36,0	36,0
Total	25	100,0	100,0

POST

	Frequency	Percentage	Porcentaje acumulado
1	2	8,0	8,0
2	1	4,0	4,0
3	10	40,0	40,0
4	10	40,0	40,0
5	2	8,0	8,0
Total	25	100,0	100,0

H

TUTORS AND STUDENTS WITH AND WITHOUT TEACHING EXPERIENCE - 2nd. DIMENSION: INTERVENTION OF PSYCHOLOGY TEACHER - Axe 4: Aims and purposes of Teacher Intervention. In **Students with former teaching experience**, Indicator (3) ***actions directed to a unique aim or objective,*** maximum frequency in Pre-Test (53,6%) diminished in Post-Test (39,3%, also maximum frequency). Indicator (4) ***different objectives or aims in teacher intervention,*** also diminished (Pre-Test, 42,9% and Post-Test, 32,1%). Indicator (5) ***different objectives articulated and evaluated before, during and after teaching intervention,*** increases from Pre-Test (3,6%) to Post-Test (10,7%). In **Students without former teaching experience**, Indicator (3) maximum frequency in Pre-Test (56%), diminished in Post-Test (40%), maximum frequency shared with Indicator (4), that in Pre-Test was (36%). Indicator (5) appears in Post-Test (8%). There were light differences. **In Tutors**: Indicator (3) (36,4%) and Indicator (4) (59, 1%). Example:

Pre-Test. "He intervenes acting with and on the problem because he considered he had conceptual tools as Psychologist. School Directors demand him help. His aim as psychologist is understand the problem, help to solve it, while as teacher he talked about the problem on fact, linking with the discipline contents to reach a better approaching and resolution with the students. He intervenes on the students and the student".

Post-Test. "Given the situation stated, the teacher appointed the student mother, giving her the information about the absence of young woman to the classes and that she was going to lose the subject and committed her mother to help her daughter to go to school and pay attention. He told to the school director the change of units in the programme and why he was going to work the contents more useful in that case, related with current social problems. Intervention was not only with or over the student, but related with all the group of young students in the class. He contextualized the contents applying them to the work with the group and the young girl".

WEAKNESS OR CRITICAL KNOTS:

STUDENTS WITH AND WITHOUT TEACHING EXPERIENCE
DIMENSION: SITUATION-PROBLEM
Axe 2: From description to contextualysed explanation of the problem

PRE

	Frequency	Percentage	Porcentaje

			acumulado
2	9	17,0	17,0
3	29	54,7	54,7

4	13	24,5	24,5
5	2	3,8	3,8
Total	53	100,0	100,0

POST

	Frequency	Percentage	Porcentaje acumulado
2	9	17,0	17,0
3	29	54,7	54,7
4	11	20,8	20,8
5	4	7,5	7,5
Total	53	100,0	100,0

TUTORS

	Frecuencia	Porcentaje	Porcentaje acumulado
2	1	4,5	4,5
3	6	27,3	31,8
4	14	63,6	95,5
5	1	4,5	100,0
Total	22	100,0	

TUTORS AND STUDENTS WITH AND WITHOUT TEACHING EXPERIENCE - 1ST DIMENSION: SITUATION-PROBLEM - <u>Axe 2: From description to contextualysed explanation of the problem</u>. In **Tutors**, Indicator (4***), it is formulated an hypothesis about factors, causes or reasons of the problem***, reaches maximum frequency (63,6%), with (27,3%9) for Indicator (3**) he/she mentions inferences beyond the data*** and (4,5%) for Indicator (5) ***he/she elaborates a complex hypothesis, with different combinations of factors inter-related***. In **Students with and without former teaching experience**, (54,7%), maximum frequency, is concentrated in Indicator (3) at the beginning and at the end of the experience, without significant differences in the Indicator (4) from Pre-Test (24,5%) to Post-Test (20,8%) and a light increase in Indicator (5) between Pre-Test (3,8%) and Post-Test (7,5%). Example:

Pre-Test: "I remember a narrated situation, in which the teacher acted as mediator in a conflict between youth people. Most significant elements were the grade of violence that had invaded the situation. The problem had begun a long time before the intervention and the context was the ending of the year of courses".

Post-test: "The intervention is a personal experience during the teaching practice: a student asked the teacher if neurosis was an illness and she answered "all of us are neurotics". I still question myself if the student could understand it. The significant thing is the absence of knowledge related with basic concepts of Psychology. The intervention took part in a class while teacher was dictating a text and students wrote in their folders".

STUDENTS WITH AND WITHOUT TEACHING EXPERIENCE
DIMENSION: INTERVENTION OF PSYCHOLOGY TEACHER
Axe 3: One or more agents in Intervention of Teaching Activity

PRE

	Frequency	Percentage	Porcentaje acumulado
1	2	3,8	3,8
3	20	37,7	37,7
4	22	41,5	41,5
5	9	17,0	17,0
Total	53	100,0	100,0

POST

	Frequency	Percentage	Porcentaje acumulado
1	1	1,9	1,9
2	1	1,9	1,9
3	27	50,9	50,9
4	19	35,8	35,8
5	5	9,4	9,4
Total	53	100,0	100,0

TUTORS

	Frequency	Percentage	Porcentaje acumulado
3	6	27,3	27,3
4	12	54,5	81,8
5	4	18,2	100,0
Total	22	100,0	

TUTORS AND STUDENTS WITH AND WITHOUT TEACHING EXPERIENCE - 2nd

DIMENSION: INTERVENTION OF PSYCHOLOGY TEACHER - <u>Axe 3: One or more agents in the agency of Intervention.</u> In **Tutors**, Indicator(3) ***he/she mentions Psychology Teacher action as the unique agent*** (27,3%), Indicator (4) maximum frequency ***he/she mentions Psychology Teacher action and other agents action without collaborative construction of the problem or the intervention*** (54,5%), and Indicator (5) ***he/she mentions Psychology teacher action articulated with other agents in co-construction of the problem or/and the intervention*** (18,2%). In **Students**, Indicator (4), with maximum frequency in Pre-Test (41,5%) diminished in Post-Test (35,8%). Indicator (5), with (17%) in Pre-Test, diminished in Post-Test (9,4%). And Indicator (3), with (37,7%) in Pre-Test, increased in Post-Test (50,9%), with maximum frequency. Example:

Pre-Test - "Just ending the class, the teacher asked the students which are the subjects linked with the current facts in society that they wanted to discuss. It was a shared responsibility the choice of the subject to develop in the conversation. The aim of the teacher was not to deny hard events had happened in the environment, with strong effects in different areas, giving students the chance to participate with opinions, questions and proposals"

Post-Test."The Psychology teacher intervenid in the problem because of the anxiety of the students with the social situation they were crossing through. Therefore, immediately the contents of the programme were developed in the class, the teacher asked the students about current week news, giving also information about grants for studying and possible jobs. The aim was to visualize collectively the chance of going on with career study and to create flexible models and representations about organizations they could state when they began to have difficulties in study because of the big social crise that was happening in the country".

STUDENTS WITH AND WITHOUT TEACHING EXPERIENCE
DIMENSION: INTERVENTION OF PSYCHOLOGY TEACHER
Axe 7: Pertinence and relevance of Psychology Teaching Intervention related to the problem and to the professional role.

PRE

	Frecuencia	Porcentaje	Porcentaje acumulado
1	4	7,5	7,5
2	8	15,1	15,1
3	28	52,8	52,8
4	13	24,5	24,5
Total	53	100,0	100,0

POST

	Frecuencia	Porcentaje	Porcentaje acumulado
1	1	1,9	1,9
2	4	7,5	7,5

3	30	56,6	56,6
4	16	30,2	30,2
5	2	3,8	3,8
Total	53	100,0	100,0

TUTORS

	Frecuencia	Porcentaje	Porcentaje acumulado
1	1	4,5	4,5
2	2	9,1	13,6
3	11	50,0	63,6
4	7	31,8	95,5
5	1	4,5	100,0
Total	22	100,0	

TUTORS AND STUDENTS WITH AND WITHOUT TEACHING EXPERIENCE - 2nd DIMENSION: INTERVENTION OF PSYCHOLOGY TEACHER - Axe 7: Pertinacity and relevance of Psychology Teaching Intervention related to the problem and to the professional role. In **Tutors**, Indicator (3) ***the intervention is directly concerned with the problem and is developed from the role of a teacher*** concentrates maximum frequency (50%), Indicator (4) *the **intervention is directly concerned with the problem and is framed in the role of Psychology teacher, with some reference to the theoretical frame or to the models of work in the field*** (31,8%), and Indicator (5), ***the perspective of Psychology teacher in the intervention is confronted and articulated with other agents perspectives from different disciplines*** (4,5%). In **Students**, Indicator (3) gets maximum frequency in Pre-Test (52,8%) and Post-Test (56,6%). Indicator (4) in Pre-Test (24,5%) with an increase in Post-Test (30,2%). Indicator (5) appears in Post-Test (3,8%). Example:

Pre-Test. "A group of teen-agerses go to school the day after a schoolmate have died. The eight teen-agers of the course begin to talk about the loss an emerges a collective crise, with uncontrolled weeping. All the boys and girls were envolved and the Psychology teacher couldn´t continue with the subjects of the programme. She asked them, she comprehends them, they discussed about the life and the death. The intervention was to accompany the group without silent them, giving them a chance to be listened, that school gave them for the first time. She used the "listening" and gave the chance of opening to the dialogue, moving from the responsibility of explain the contents of the programme. Another tool was the transference and the identification, because the teacher told them something very similar she had suffered long time ago".
Post-Test. "The problem emerges in the classroom context. A student, during the time of the class, doesn´t pay attention, trying constantly to distract her schoolmates. The Psychology teacher is developing a class observation for the practitioner, he waits the class finishes and tries to talk with the student. But she gets violent and follows a discussion in front of the other students. The teacher, during the class time has been watching constantly to the student, staring at her with the intention that she changes the attitude. He waited the end of the class for demanding her attention".

CONCLUSIONS: REFLECTIONS FOR OPENING THE DISCUSSION

Data analysis allows us to appreciate ***strengths in the process of becoming professional*** of the teachers of Psychology in ***axes and dimensions*** with significant shifts between the beginning and the end of educational experience in the subject "Specific Didactic and Teaching Practice", related to the enhancement in the mental models of professional intervention of "Teachers of Psychology in modeling". Also we can appreciate ***critical knots in*** other axes and dimensions of the process

with cycles of reproduction and encapsulation in the mental models of teaching activity, due to tensions or obstacles on which it is necessary to widen and go on deep with the research, drawing with the teachers-tutors team more appropriate actions of pedagogy. There are ***significant differences*** in some axes and dimensions, with ***heterogeneous outcomes*** between students with former teaching experience and students without former teaching experience.

Strengths:

* "Teachers of Psychology in modeling" in Undergraduate Apprenticeship analysed problems with a complex cutting in educational context, linking actors, dimensions and factors in their interactions and multiple connections. At the end of educational experience, simple and unidimensional explanations had disappeared in the sample of students. (Axe 1 in Dimension Situation-Problem)

* The increase of perspectivism in the analysis of the problems and the competence of dis-centering from a unique perspective for understanding the problem is linked with the multivoicedness and complexity of educational events. (Axe 6 in Dimension Situation-Problem) . Increase of perspectivism is stronger in students without former teaching experience.

Heterogeneous outcome

* In Students with teaching former experience, at the end of Apprenticheship diminished the answers that articulate multiple aims or objectives before the intervention, while in Students without teaching former experience, there was in increase of the multiple aims at the end of Apprenticeship and more frequently than at the beginning, some of them articulate the aims before, during and after the intervention. It´s the competence of planning, anticipating results of actions connected with goals.

Critical Knots:

* The answers didn´t present significant differences in the transition from description to contextualysed explanation of the problems, connected to enhancement of the process going from the implicit to the explicit. Students mention inferences beyond the data, at the beginning and at the end of the experience, and in Post-Test they assumed the perspective of the teacher role, which represents a qualitative improvement. The competence for constructing hypothesis for explain the problems in educational contexts would give them the possibility of support on scientific basis the reasons of their actions of intervention and evaluation of outcome.

* Between the beginning and the end of apprenticeship, answers about interventions from more than one agent diminished. The agency of the teacher is unilaterally mentioned. The participation of other agents diminished. The communities of practice should generate more opportunities for inter-agency between different professional agents and between different social actors for co-constructing the problems and co-drawing innovative interventions.

* Concerning to pertinence and relevance of intervention related to the problem and to the role of Psychology teacher, at the end of educational experience, the answers emphasized the role of the teacher, but not the role of Psychology teacher, without mentioning models of work in Teaching of the Discipline, and without confronting or comparing with other perspectives of intervention, different from the teacher one. Also Tutors had difficulties for imaging pertinence from the role of Psychology teacher.

The figure that these mental models draw of the Psychology teacher, from the perspective that is offered by tendencies of students of Psychology Teaching Courses is, more than others, the

figure of the therapist that cultivate the others, from empathy with the subject who is growing and sef-developing. Discipline knowledge vanishes, including its potentiality or power for transforming situations and liberating people. Teaching concerns - because there is a very close *social representation of Psychologist that contaminates that of Psychology Teacher* - to necessity of *emergency of the subject* rather than building, finding and exchanging relevant senses in learning and teaching of Psychology. But *"if culture consists in finding and living sense to existence, to environment, to the world around us, to the relations with people we love, to the own history of life, perhaps it isn´t necessary to know everything, but it will be necessary to know what permits giving and finding sense"* (Perrenoud, 2003:3).Working with situations-problems is a very useful tool in *"contexts of practice, of discovering and of criticism that socio-historic-cultural perspective of expansive learning supposes linked with protagonism of actors"* (Engeström, 1991:256). *"Who learn should have the opportunity for drawing and realizing in the practice a new opening, a new model for their activity. Students will produce a new way of doing the work…, namely, they should learn something is not there yet, they reach their futur activity while they create it"* (Engeström, 1991:254)

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